

Docket No. 267547US0PCT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Mamoru NAGAO, et al.

SERIAL NO: New U.S. PCT Application Based on PCT/JP03/12121

GAU:

FILED: Herewith

EXAMINER:

FOR: HOT MILLED WIRE ROD EXCELLING IN WIRE DRAWABILITY AND ENABLING AVOIDING HEAT TREATMENT BEFORE WIRE DRAWING

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s), published application(s) or issued patent(s) which may be related to the present application. In accordance with the waiver of 37 CFR 1.98 dated September 21, 2004, copies of the cited pending applications are not provided. Cited published and/or issued patents, if any, are listed on the attached PTO form 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Norman F. Oblon

Registration No. 24,618

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 05/03)

Surinder Sachar

Registration No. 34,423

Form PTO 1449
(Modified)U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY DOCKET NO.

267547US0PCT

SERIAL NO. 10/528263
New U.S. PCT Application
Based on PCT/JP03/12121

LIST OF REFERENCES CITED BY APPLICANT

APPLICANT

Mamoru NAGAO, et al.

FILING DATE

Herewith

GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
					YES	NO
	AO	708182	04/24/96	EP(Equivalent of WO 95/26422)		NO
	AP	2001-294981	10/26/01	JP		NO
	AQ	3-60900	09/18/91	JP		NO
	AR	2001-179325	07/03/01	JP		NO
	AS					
	AT					
	AU					
	AV					

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)

	AW	
	AX	
	AY	
	AZ	

☐ Additional References sheet(s) attached

Examiner

Date Considered

*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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STATEMENT OF RELEVANCY

1) References AO & AP have been cited in the International Search Report. Copies of these references are being submitted herewith only when not automatically provided by the International Searching Authority.

2) References _____ have been cited in the corresponding _____ Search Report. A copy of these references is being submitted herewith.

3) References AQ & AR are discussed in the specification. A copy of these references is being submitted here with.

4) Reference _____ is additional prior art known to Applicant. A copy of these references is being submitted herewith.

1. JP 3-60900

PURPOSE: To decrease the wear of a die to be used in drawing in the stage of producing a high-carbon steel wire rod by drawing by hot rolling the wire rod then subjecting the rolled material to a water cooling treatment and further to a direct patenting treatment involving controlled cooling by a blast.

CONSTITUTION: A steel material contg. 0.7W1.0 carbon equiv. (C+Mn/5) is hot – rolled and is worked to a wire rod, which is then subjected to a direct patenting treatment by a blast after water cooling. The cementite component constituting pearlite in the texture of the hot rolled wire rod is finely dispersed by such treatment, thereby providing fine pearlite structure. The treatment is accomplished in such a way that the coarse pearlite occupies at a rate of -60X carbon equiv. + 69.5±3(%). The treated material is drawn with a die, and the high-carbon steel wire rod such as a piano wire which has a tensile strength of 87.5X carbon equiv. + 27±2(kg/mm²) and lessens wear of the die during drawing is produced.

2. JP 2001-179325

PROBLEM TO BE SOLVED: To provide a method of softening hot rolled wire rods with the considerations on tensile strength and the average cooling rate.

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SOLUTION: Softening is performed after finding out necessary conditions for softening –i.e., the tensile strength of rolling materials, the austenitic grain size number before start of slow cooling, and the average cooling speed-relate to each other.